

Figure 1. Chemical synthesis of Oligonucleotides

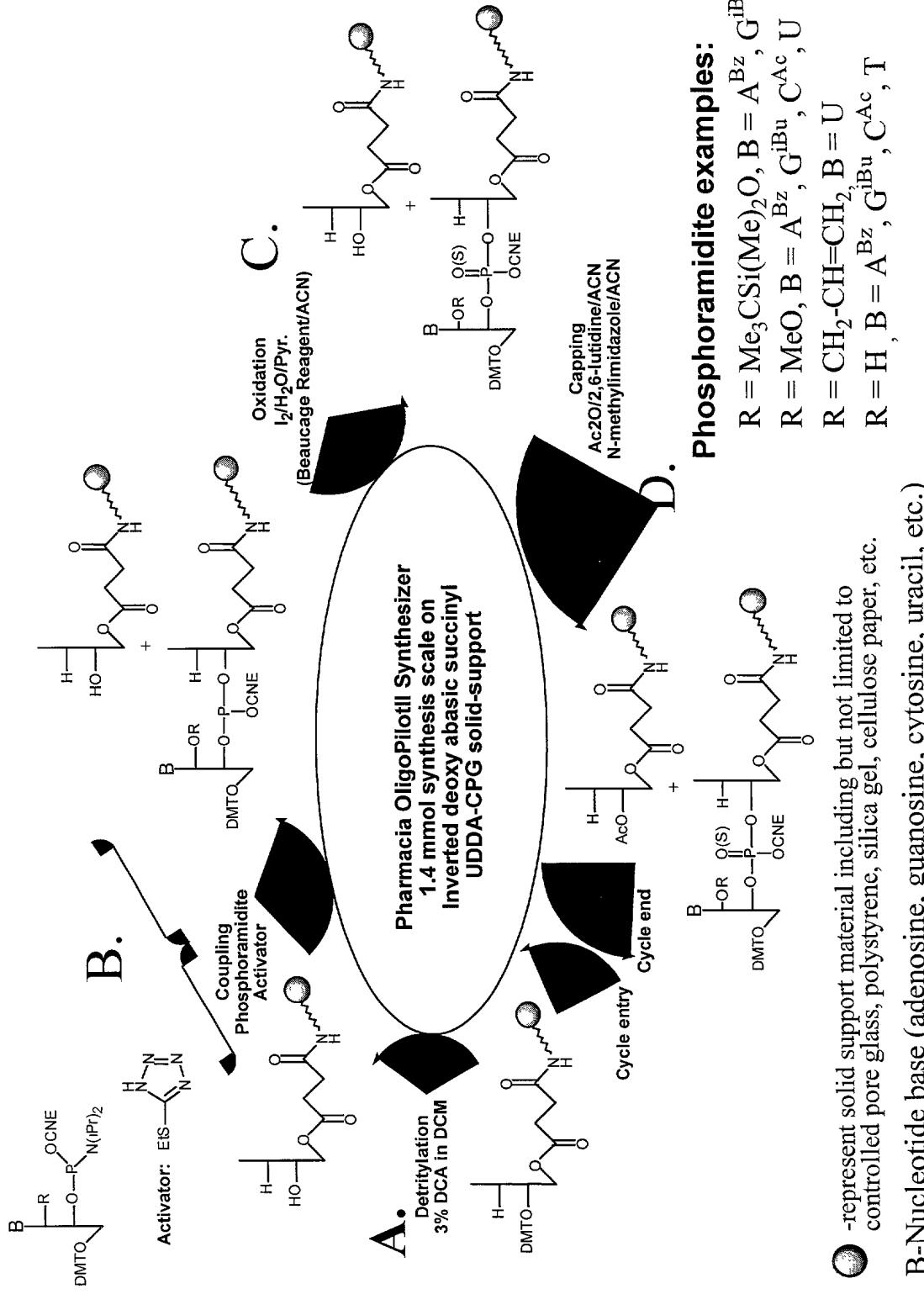


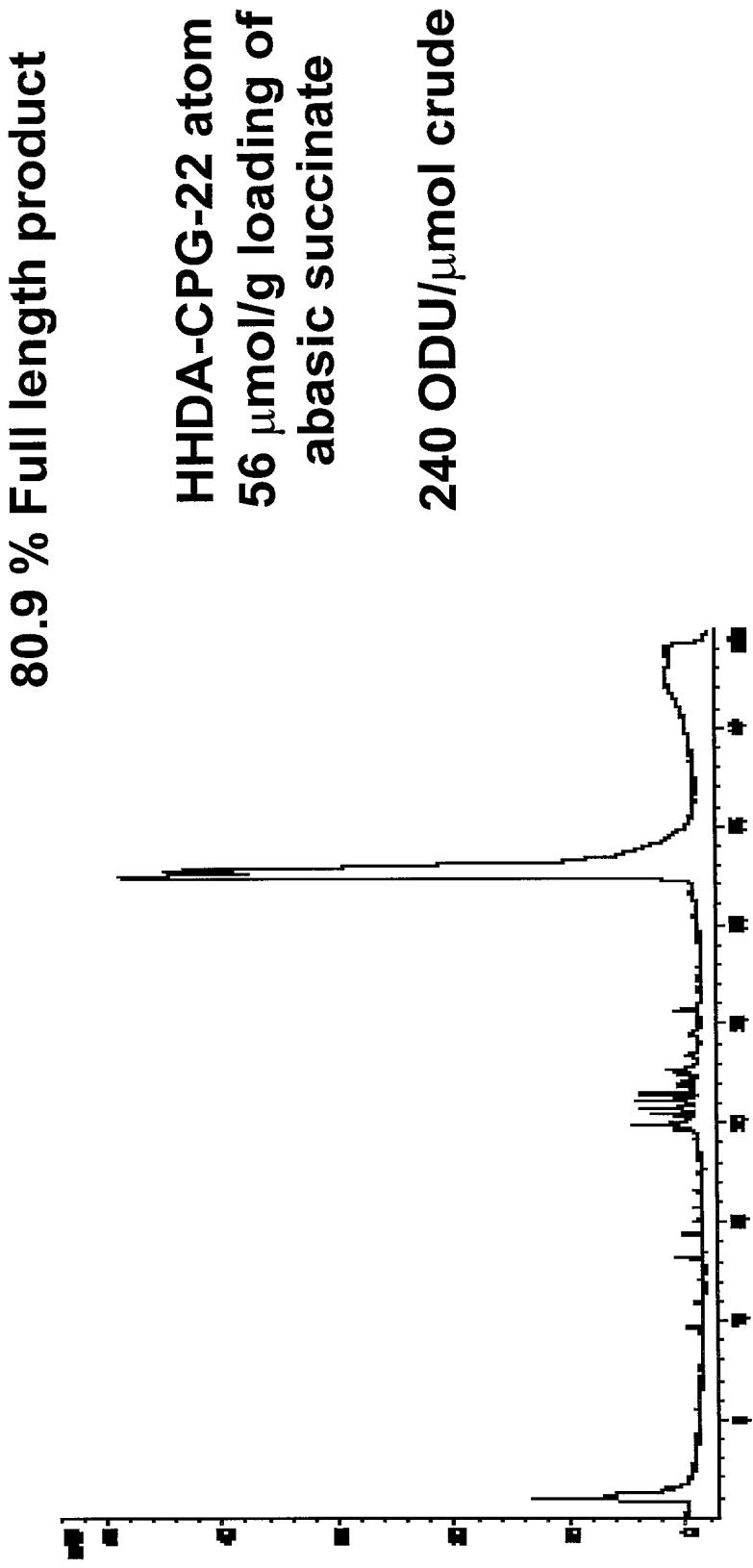
Figure 2

Chemical Structure	Alias	Product Yield	Efficiency
	22 atom CPG, HDDA CPG	230 - 240 ODs/umol	80%
	20 atom CPG, UDDA	270 - 280 ODs/umol	78-80%
	19 atom CPG, PEG CPG	280 - 290 ODs/umol	85-87%

ODMT- dimethoxytrityl

○ -represents controlled pore glass (CPG)

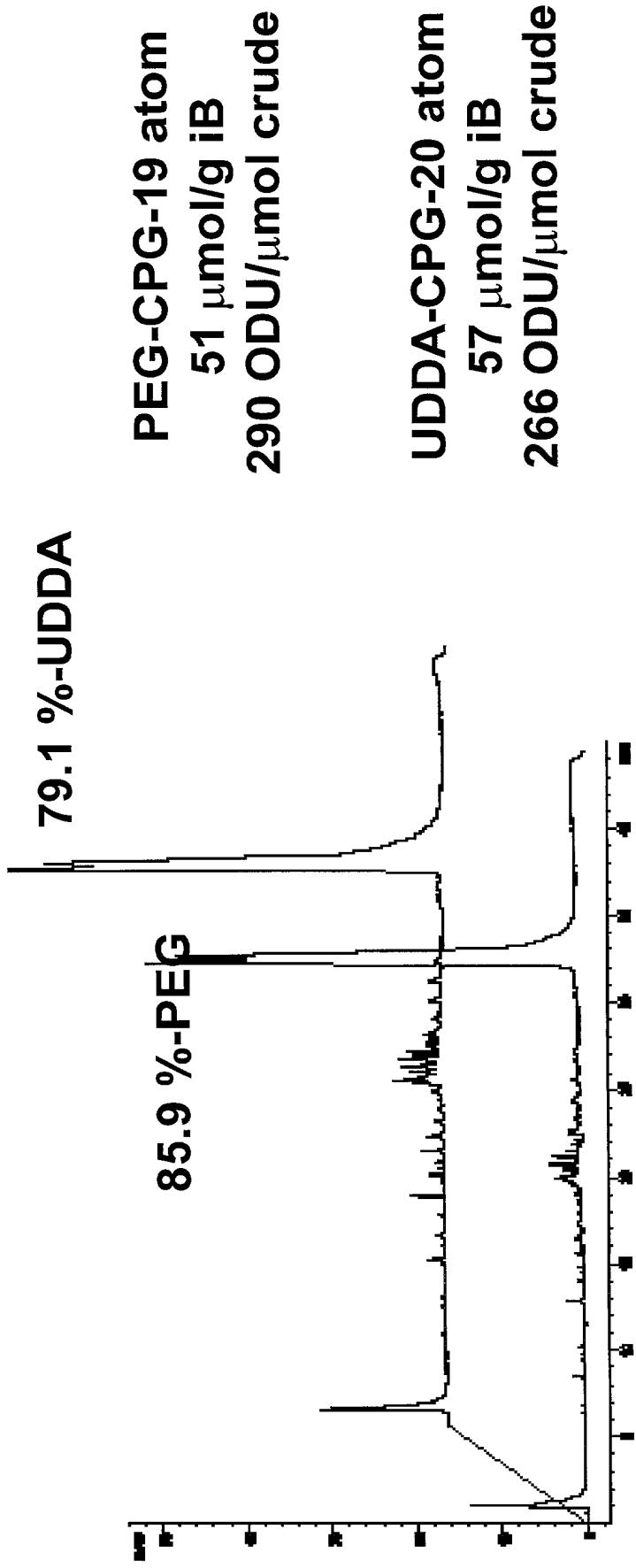
Figure 3. HPLC chromatograph of Ribozyme synthesized using CPG Linked HHDA Spacer



**Ribozyme Sequence:**  $g_s a_s g_s u_s u g c U G A u G a g g c c g a a a g g c c G a a A g u c u g B$

Lower 2'-O-methyl modification  
U-2'-C-allyl  
S-phosphorothioate  
B-3'-3' inverted abasic moiety  
A, G-adenosine, guanosine

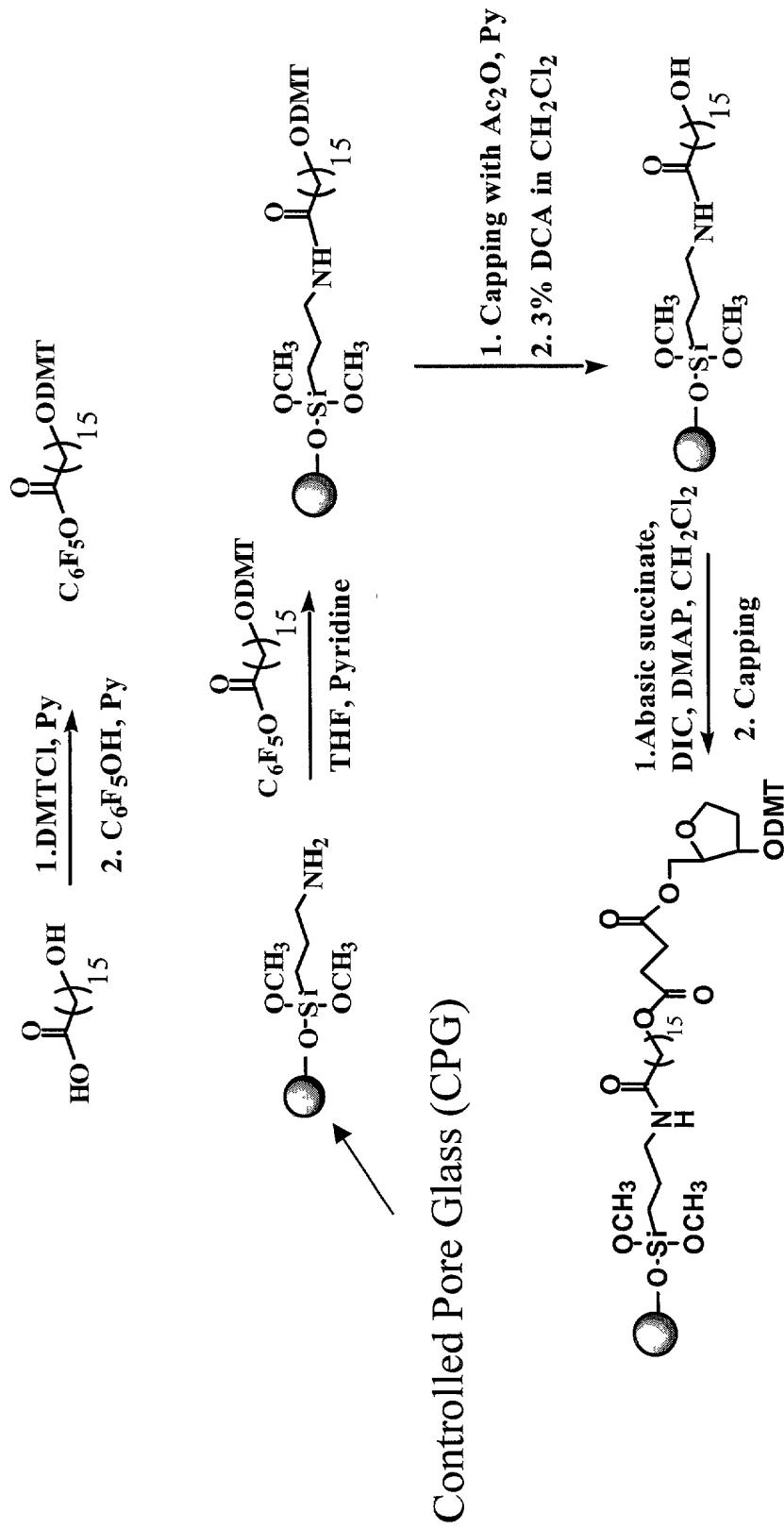
Figure 4. Synthesis of Ribozyme on CPG linked PEG and UDDA Spacers



**Ribozyme Sequence:** g<sub>s</sub>a<sub>s</sub>g<sub>s</sub>u<sub>s</sub>ugcUGAuGaggccgaaaggccGaaAgucugB

Lower 2'-O-methyl modification  
U-2'-C-allyl  
S-phosphorothioate  
B-3'-3' inverted abasic moiety  
A,G-adenosine, guanosine

Figure 5. Synthesis of CPG linked HHDAs CPG (22 atoms) Spacer



# Figure 6. Synthesis of CPG-Linked PEG (19 atoms) Spacer

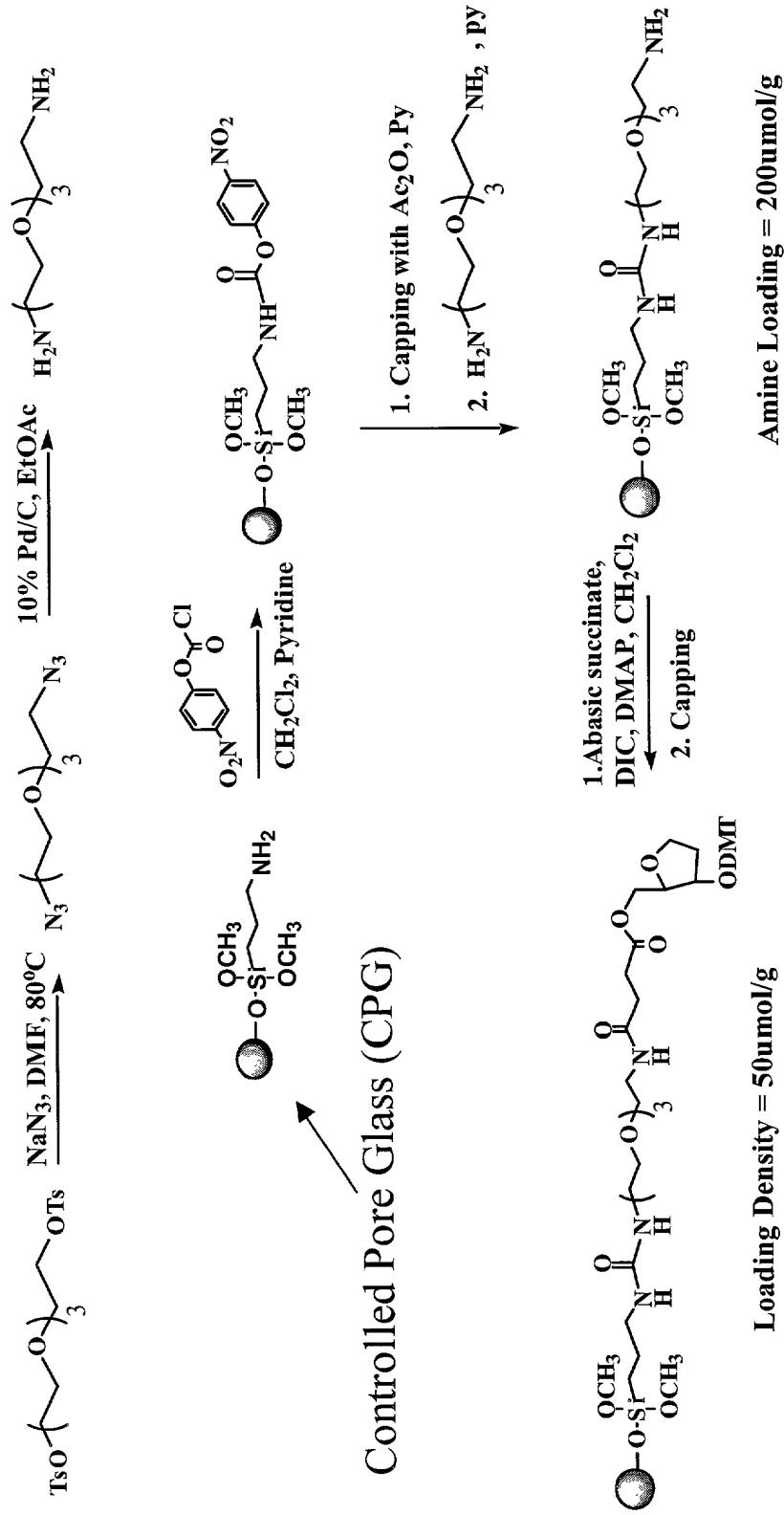


Figure 7. Synthesis of CPG linked UDDA Spacer

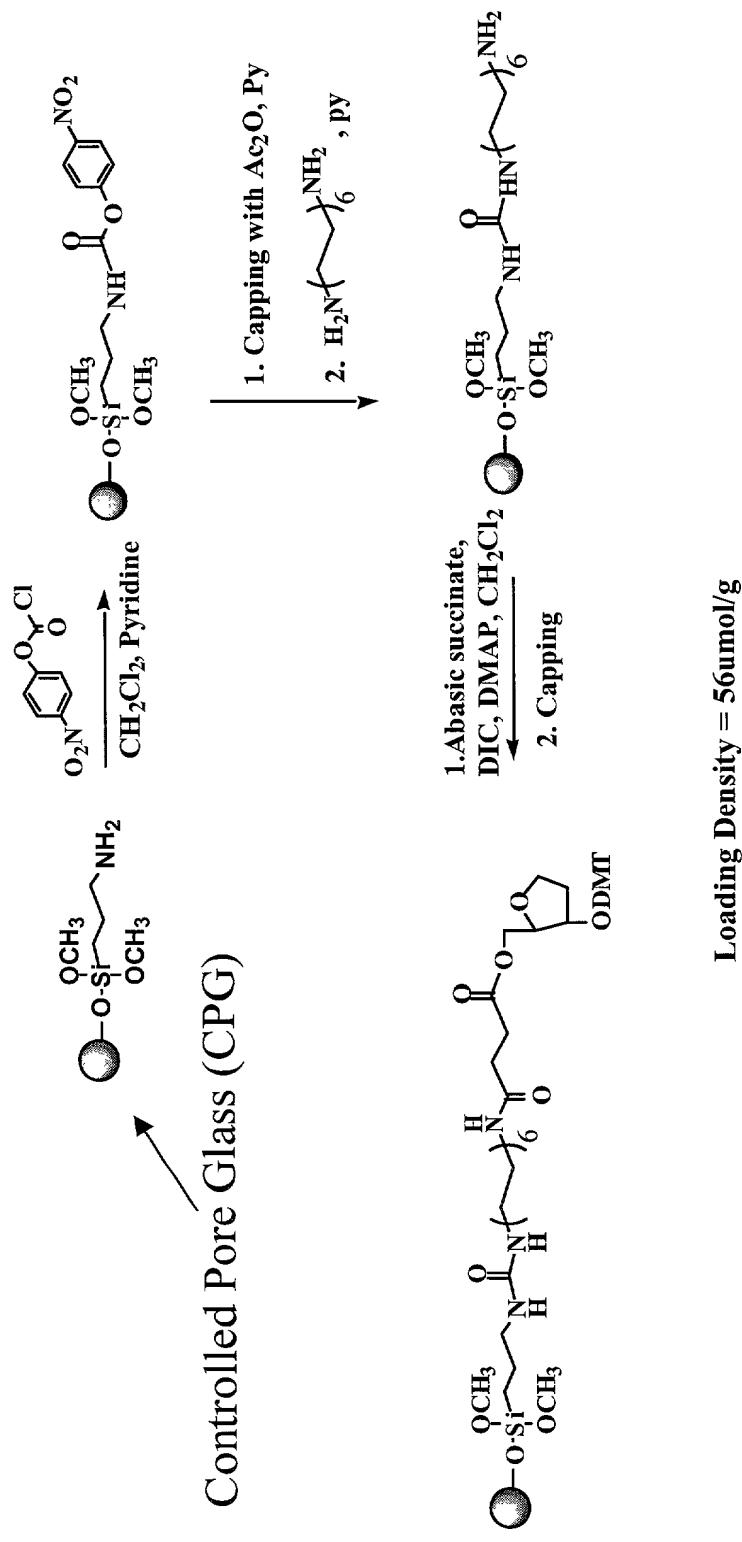
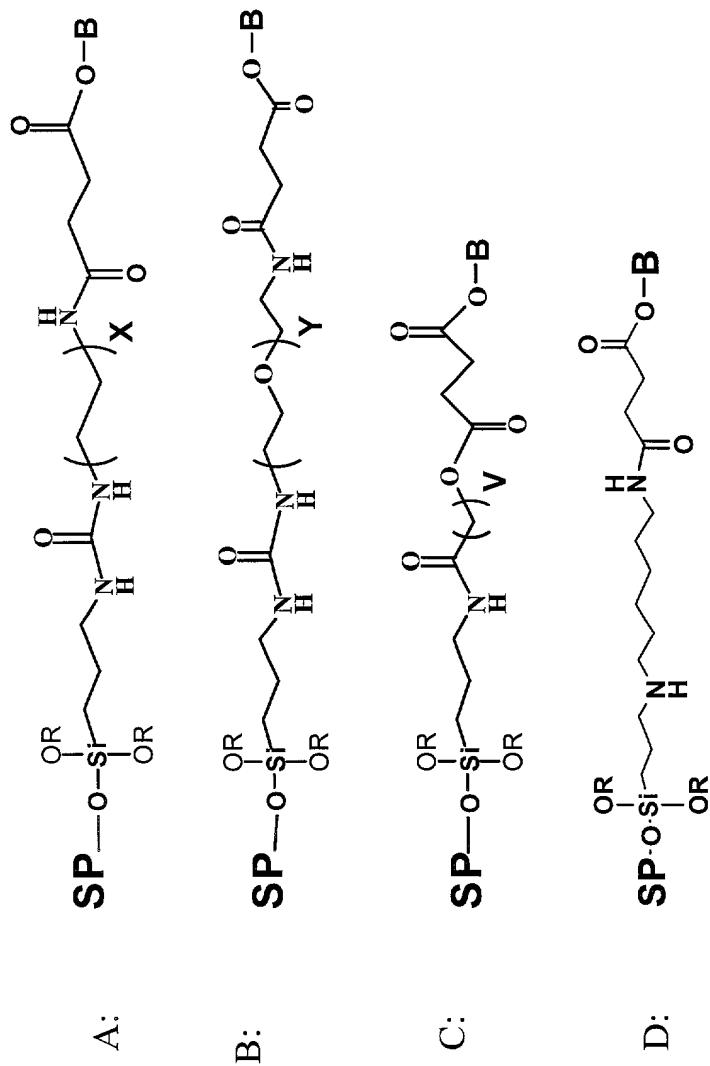


Figure 8. General Chemical formulae for Spacers



SP- solid support

B- terminal chemical group

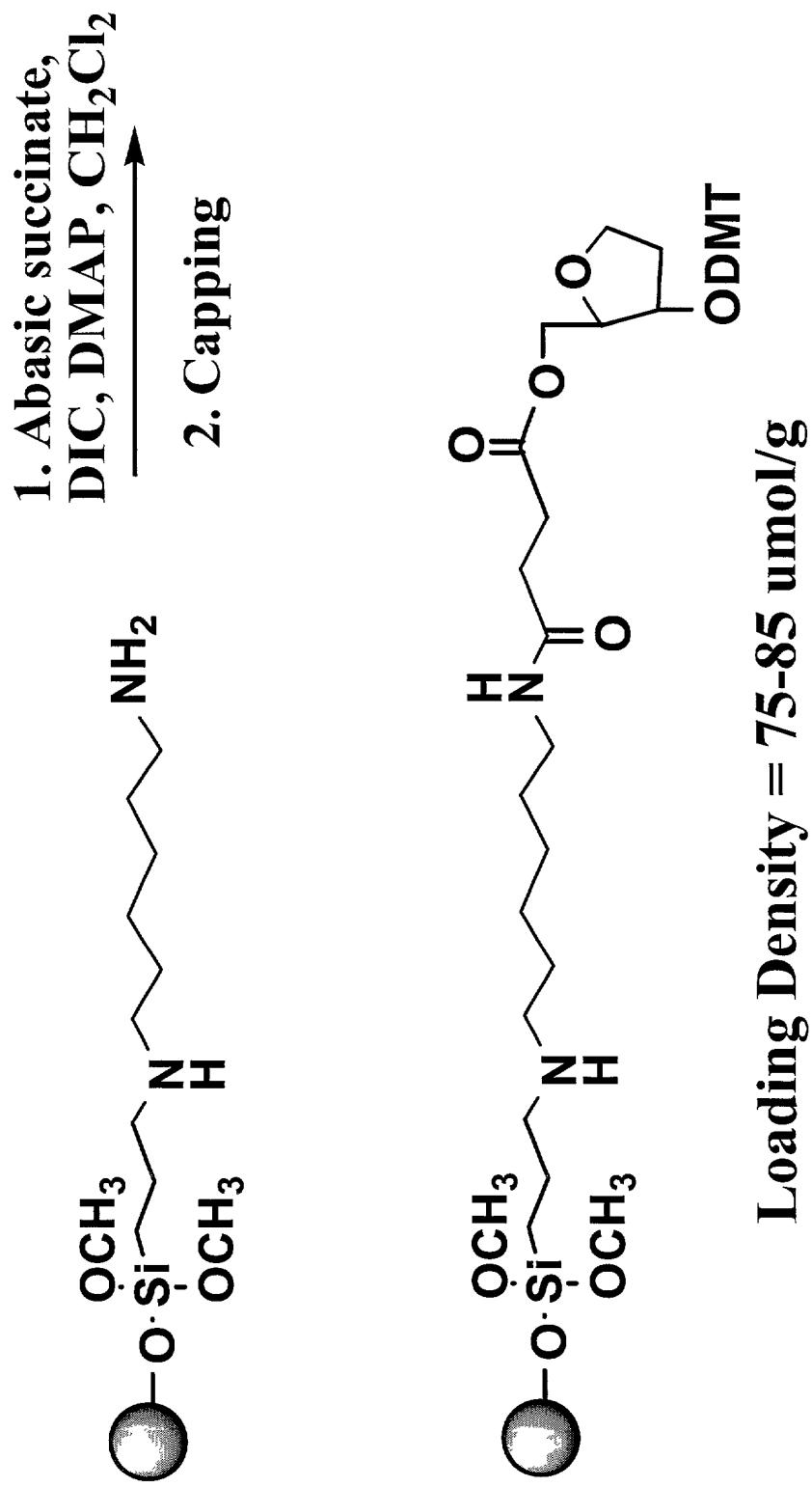
X- integer between 2 and 6 (i.e. 2, 3, 4, 5, 6)

Y-integer between 1 and 4 (i.e. 1,2,3,4)

V-integer between 5 and 16 (i.e. 5,6,7,8,9,10,11,12,13,14,15,16)

R- represents a moiety selected from a group comprising alkyl, alkenyl, alkynyl, aryl, alkylaryl, carbocyclic aryl, heterocyclic aryl, and the like

*Figure 9: Synthesis of abasic derivatized C9 CPG*



*Figure 10: CGE of Crude Angiozyme<sup>TM</sup> Synthesized on C9 CPG*

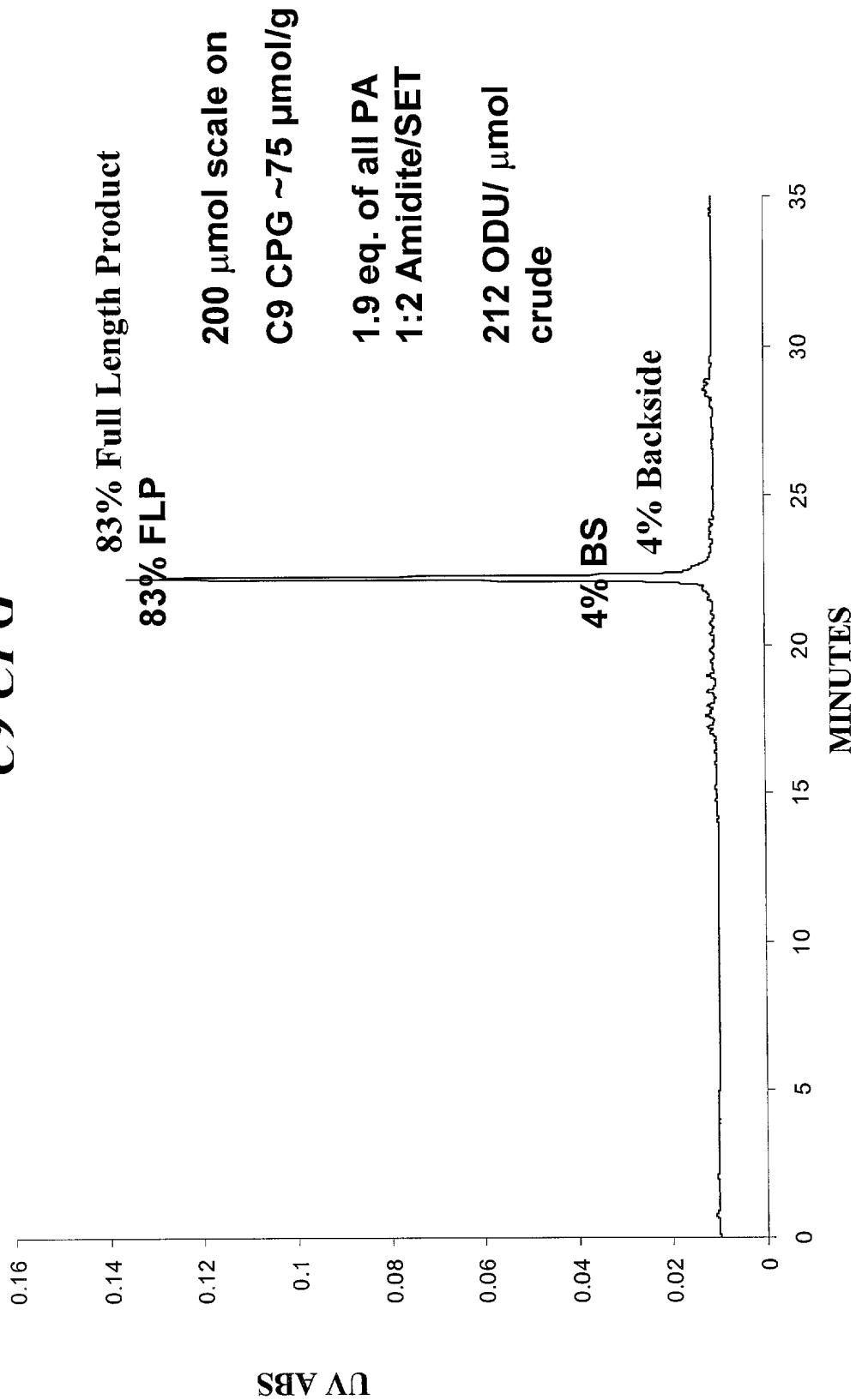


Figure 11: Chemical Synthesis of Oligonucleotides, *in situ* Phosphoramidite

